

ENTOMOLOGY.—*An extraordinary adult myrmecophile from Panama.*

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Under the title *Two extraordinary larval myrmecophiles from Panama*,<sup>1</sup> Dr. W. M. Wheeler recently described a peculiar larva of a dipteran which he thought might prove to belong to the genus *Microdon* (Syrphidae) or to a closely allied genus. As a result of his paper, additional data relating to this group of myrmecophiles came to light, all of which fit together fairly well to make a very interesting account. Incidentally, a new species of *Microdon*, peculiar enough to be quite in keeping with the remarkable larva recorded by Wheeler and which may eventually prove to be the adult, was found in the National Museum collection and is described below.

Dr. Wheeler found more than a hundred individuals of a peculiar type of larva in the nest of an ant, *Azteca trigona* Emery. No adults were reared and the authenticated imago remains unknown. Wheeler states that a study of the larvae "shows a vague kinship to the Syrphid *Microdon*, \* \* \* . On the other hand the rigidity of the integument on the ventral surface and absence of a creeping-sole, the proportionally much greater development of the thoracic segments, the large, cylindrical and undoubtedly functional prothoracic stigmata, the finer structure of the posterior stigmata, etc., are all characters which separate the larva under discussion from the Syrphidae and other aschizous Cyclorrhapha. Since it in all probability represents a new genus and may even represent a new family of Diptera I propose to call it *Nothomicrodon aztecarum* gen. nov. et sp. nov.

"What the larvae do in the carton nests of *Azteca trigona* must remain a mystery till they are encountered by some observer who can study the behavior of both ants and guests in an artificial nest. The powers of locomotion of the larvae must be nil or limited merely to slowly dragging themselves by means of their feeble mouth-hooks. Perhaps they are actually carried about the nest by the ants. That they may feed on ant larvae is suggested by the fact that the brood was much less abundant in the nest in which they occurred than in several uninfested nests of the same ant which I examined in the avocado orchard of Mr. John English at Frijoles."

Shortly after the appearance of Dr. Wheeler's paper Dr. Mario Bezzi suggested, in correspondence with Dr. J. M. Aldrich, the possibility of *Nothomicrodon aztecarum* Wheeler being the larva of a very

<sup>1</sup> Proc. Nat. Acad. Sci. 10: 240. 1924.

unique South American dipteran, namely, *Masarygus planifrons* Brethes,<sup>2</sup> habitat, General Urquiza, Buenos Aires, Argentina, which has cleft antennae, or of one of its relatives. When Dr. Aldrich related this to the writer it recalled to his mind a *Microdon*-like syrphid in the undetermined material from Panama, collected by Mr. August Busck, which also had cleft antennae. It differs from the male of *Masarygus planifrons*, which has the third antennal joint divided into four branches, by having only two branches.

Brethes apparently was unaware of the relationship of his species to the Syrphidae, as he only compared it with the Syrphidae in the most casual way ("Solamente el abdomen es un poco hinchado en la hembra, mientras que el macho seria, bajo ese concepto, semejante a varios Syrphidae"). He compared the species with the Conopidae and the Oestridae, and on the basis of their differences erected the family Masarygidae: "De todo lo expuesto creo que la neuva familia Masarygidae debe colocarse entre los Conopidae y los Oestridae, pues con las demas familias la relacion es demasiado remota." His description and figures of *Masarygus planifrons* reveal such close similarity to the Microdontinae that it is necessary to include it in the *Microdon* group. Moreover, he related how he found his specimens on a wooden post, running in and out of the galleries of an ant, *Camponotus mus* Rog., which was inhabiting the post. All species of *Microdon*, as far as known, are myrmecophiles.

Dr. Bezzi in a subsequent letter to Dr. Aldrich states that *Masarygus* Brethes may be congeneric with *Ceratophya* Wiedemann, a genus established<sup>3</sup> just 100 years ago, and founded upon material collected in Brazil. Only female specimens were known to Wiedemann and they agree essentially with the female of *Masarygus planifrons* in which the antennae are normal. Unless the males of the species of *Ceratophya* have cleft antennae this genus must be considered as a synonym of *Microdon*, as now understood. Dr. Bezzi also gave the reference to his paper in which he states that *Masarygus* is probably synonymous with *Ceratophya*, essentially as outlined above.<sup>4</sup>

Whether *Masarygus* is generically distinct from *Microdon* on the basis of adult characters remains to be determined. The distinctive feature, i.e., the cleft antennae, as far as the evidence at present shows, is peculiar only to the male sex. Otherwise *Masarygus* is quite similar to a group of small, more or less yellowish, *Microdon* (*Ceratophya* ?)

<sup>2</sup> Mus. Nac. Buenos Aires 410. 1908.

<sup>3</sup> Wiedemann, *Analecta Entomologica* 14. 1824.

<sup>4</sup> *Societas Entomologica* 25: 67. 1910.

occurring in the American tropics. The cleft antenna, without the arista, is unique in the Diptera. A number of species of Tachinidae have the third antennal joint cleft, but the arista is present. Certain Tabanidae (no arista occurs in this family) apparently have the cleft antennae, but this is owing to a projection from the upper basal corner of the third joint. A genus of Acylopterae Diptera, *Cryptochaetum*, has no arista. The present species is tentatively placed in *Microdon* and for the present is designated by a distinctive specific name.

#### Family SYRPHIDAE

Masarygidae Brethes, Mus. Nac. Buenos Aires 410. 1908.

Genus *Microdon* Meigen, *sensu latus*.

*Ceratophya* Wiedemann, Analecta Entomologica 14. 1824.

*Masarygus* Brethes, Mus. Nac. Buenos Aires 410. 1908.

*Nothomicrodon* Wheeler, Proc. Nat. Acad. Sci. 10: 240. 1924.

#### *Microdon megacephalus*, new species.

*Male*.—A small golden yellow species with dark mesonotal markings. Head very large, noticeably broader than high; eyes nearly twice as long as wide, very slightly approaching above; face very broad, widening upwards to near top of eyes; ocellar tubercle very prominent, ocelli closely grouped; the triangle broader than long; first antennal joint slender, about as long as distance between antennal base and eye margin; second joint very small; third joint nearly four times as long as first, very broad basally and sheet-like, with an incision extending nearly to its base, dividing it into two branches, each branch tapering to a point; front and face golden yellow, a blackish line extending across ocelli from eye to eye which is clothed with black, short, coarse pile; a similar dark line looped around antennal base; facial pile very sparse, golden; mouthparts somewhat reduced; thorax very small, much smaller in dorsal aspect than frontal aspect of head; with three broad blackish stripes; scutellum yellow; thoracic pile very sparse, coarse, reddish yellow; legs entirely yellow; fore and mid legs slender and with yellow pile; hind legs more or less swollen throughout; the tibia along the upper surface with densely matted, long black hairs; abdomen deep golden with sparse, coarse, golden pile; four-segmented, the fourth nearly as long as first three combined; hypopygium remarkably enlarged, globose, with coarse black hairs; wings hyaline; stigmal crossvein present; spurious vein nearly obsolete; third vein simple; apical crossvein nearly straight, slightly directed basally, making apex of first posterior cell nearly quadrate. Length 7 mm., wing 5.5 mm., third antennal joint 2.75 mm., width of head 2.75 mm., width of thorax 2 mm.

*Type locality*.—Old Panama, Panama; January 31, 1911 (A. Busck).

*Type*.—Cat. no. 27824, U. S. N. M.